

Laboratory Spectroscopy of Astrophysically-Relevant Materials: Developing Dust as a Diagnostic

Abstract:

Over forty years ago, observations in the new field of infrared astronomy showed a broad spectral feature at 10 microns; the feature was quickly associated with the presence of silicate-rich dust. Since that time, improvements in infrared astronomy have led to the discovery of a plethora of additional spectral features attributable to dust. By combining these observations with spectroscopic data acquired in the laboratory, astronomers have a diagnostic tool that can be used to explore underlying astronomical phenomena. As the laboratory data improves, so does our ability to interpret the astronomical observations. Here, we discuss some recent progress in laboratory spectroscopy and attempt to identify future research directions.